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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/248,392 | 02/12/1999 | HUBERTUS ALEXANDER SPAEPEN | GB97/023 | 8699 |

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EXAMINER

LISH, PETER J

ART UNIT PAPER NUMBER

1754

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/248,392

Applicant(s)

SPAEPEN, HUBERTUS
ALEXANDER

Examiner

Peter J Lish

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/13/04.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date 4/1/04.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to the rejection(s) of claim(s) 1-21 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the newly amended claim.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matthews et al. (US 5,679,220).

Matthews et al. teaches a process for the production of precipitated calcium carbonate by the reaction of a slurry of calcium hydroxide with carbon dioxide gas. The aqueous calcium hydroxide slurry is mixed with an aqueous slurry any of a variety of papermaking fibers, such as cellulosic or recycled fibers. Carbon dioxide is then introduced into the slurry. The resulting mixture may then immediately be sent through in-line mixers, such as static in-line mixers, forming small bubbles of carbon dioxide to ensure efficient contact and reaction. The reaction occurs between flowing streams, whereby the entire process is continuous.

Matthews et al. does not disclose the use of 3 or more, such as 4 to 7, in-line static mixers, however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use 3 or more, such as 4 to 7, in-line static mixers in the process of Matthews et al. because

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the use of more carbon dioxide introduction locations and in-line static mixers increases the rate and efficiency of thoroughly mixing the carbon dioxide and the aqueous calcium hydroxide slurry.

Regarding claims 6-9, the pressure in the mixing/reaction zone may vary from one to several atmospheres, which is seen in incorporate the claimed hydraulic pressure range of 50-100 kPa.

Matthews et al. does not disclose that the hydraulic pressure of the aqueous suspension progressively falls as it passes through the series of static in-line mixers; however, one of ordinary skill in the art at the time the invention was made would optimize the hydraulic pressure throughout the process, especially at the static in-line mixers, in order to provide a continuous flow of products as well as intimate mixing. It is also well known in the art that hydraulic pressure falls as it flows through piping, mixers, conduits, bends, etc.

Regarding claims 10-12, Matthews et al. does not teach that carbon dioxide is independently supplied to each mixing site from a common source or using independent pressure control; however, it would have been obvious to one of ordinary skill in the art to do so in view of good process control technique since independent supply of carbon dioxide to each mixing site would result in better controlling the rate at which calcium carbonate product is produced.

Regarding claims 16-18, no difference is seen between the fibers of the Matthews et al. and the fines from a papermaking process, as claimed.

Regarding claims 19-21, Matthew et al. does not disclose the mixing ratio of fiber slurry and calcium hydroxide slurry, however, it would have been obvious to one of ordinary skill at the time of invention to utilize a mixing ratio between 1:10 and 10:1, or wherein the fibers constitute between 0.5 and 20% by weight of the combined slurry, because doing so is seen to be the optimization of a known process and is held to be obvious by *In re Boesch*, 205 USPQ 215. The use of an inline mixer to mix the combined slurry, as in claim 21, is also held to be obvious to one

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of ordinary skill at the time of invention, as Matthews teaches that inline mixers increase the speed and efficiency of mixing when mixing two flowing streams.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



PL

STUART L. HENDRICKSON
PRIMARY EXAMINER